Experimental Brain Research

Volume 92 · 1992/93

Managing Editors P. Andersen, Oslo W.D. Willis, Galveston V.J. Wilson, New York

Board of Editors

Neurophysiology

P. Andersen
Institute of Neurophysiology
University of Oslo
P.B. 1104 Blindern
N-0317 Oslo
Norway
FAX 2-85 12 49

V.J. Wilson
The Rockefeller University
1230 York Avenue
New York, NY 10021, USA
FAX 212-327-8530

Sensory Physiology

R. Shapley
New York University
Faculty of Arts and Science
Center for Neural Science
4 Washington Place, R. 912
New York, NY 10003, USA

W.D. Willis, jr.
Dept. of Anatomy and Neurosciences
Marine Biomedical Inst.
The University of Texas Medical Branch
200 University Bvd., S. 608
Galveston, TX 77550-2772
USA
FAX 409-762-9382

Neuropharmacology

G.L. Collingridge
University of Birmingham
Dept. of Pharmacology
The Medical School
Edgbaston
Birmingham B15 2TT, U.K.

Neuroanatomy and Developmental Neurobiology

L.J. Garey
Dept. of Anatomy
Charing Cross & Westminster Medical School
Fulham Palace Road
London W6 8RF, U.K.

C. Sotelo
INSERM – U 106 –
Hôpital de la Salpetrière
47 Bd. de l'Hôpital
F-75651 Paris Cedex 13
France

Histochemistry and Neuroplasticity

A. Björklund
Dept. of Histology
University of Lund
Biskopsgatan 5
S-22362 Lund, Sweden

Behavioural Sciences and Neuropsychology

A.D. Milner
Psychological Laboratory
University of St. Andrews
St. Andrews, Fife KY16 9JU
U.K.

Board of Co-Editors

Neurophysiology

G.E. Alexander, Atlanta
J. Bureš, Praha
R.E. Burke, Bethesda
P. Buser, Paris
N. Dieringer, München
J.C. Eccles, Contra
E.E. Fetz, Seattle
A.P. Georgopoulos, Baltimore
C. Ghez, New York
J.M. Goldberg, Chicago
U. Heinemann, Köln
H. Hultborn, Copenhagen
M. Ito, Tokyo
P.G. Kostyuk, Kiev
G.E. Loeb, Kingston
H.D. Lux, München
J.C. Rothwell, London
P. Rudomin, México
R.F. Schmidt, Würzburg
R.H. Schor, Pittsburgh
H. Shimazu, Tokyo
J.F. Soechting, Minneapolis
T. Tsumoto, Osaka
S.P. Wise, Poolesville

Sensory Physiology

J.-M. Besson, Paris
B. Cohen, New York
H. Collewijn, Rotterdam
M. Cynader, Vancouver
U. Eysel, Bochum
E.P. Gardner, New York
M.E. Goldberg, Bethesda
T.M. Hamm, Phoenix
P. Hammond, Keele
K.-P. Hoffmann, Bochum
A. Iggo, Edinburgh
R. Klinke, Frankfurt/M.
L. Maffei, Pisa
P.B.C. Matthews, Oxford
G.A. Orban, Leuven
W. Singer, Frankfurt/M.
N. Suga, St. Louis

Neuropharmacology

Y. Ben-Ari, Paris
I. Creese, Newark
D.R. Curtis, Canberra
S.N. Davies, Aberdeen
P. Feltz, Strasbourg
T.P. Hicks, Greensboro
T. Hökfelt, Stockholm
L. Iversen, Hoddesdon
I. Kilpatrick, Bristol
M.G. Lacey, Birmingham
H. McLennan, Vancouver
M. Otsuka, Tokyo
A. Schousboe, Copenhagen
P. Seeman, Toronto
A.M. Sillito, London
W. Zieglgänsberger, München

Neuroanatomy and Developmental Neurobiology

J. Altman, West Lafayette
P. Brodal, Oslo
M. Frotscher, Freiburg
H. Holländer, München
G.M. Innocenti, Lausanne
E.G. Jones, Irvine
K. Kawamura, Tokyo
H. Kennedy, Lyon
E. Rinvik, Oslo
P. Rakic, New Haven
P. Somogyi, Oxford
J. Szentágothai, Budapest
J. Voogd, Rotterdam

Histochemistry and Neuroplasticity

A.J. Aguayo, Montreal
S.B. Dunnett, Cambridge
T.F. Freund, Budapest
L. Olson, Stockholm
J. Storm-Mathisen, Oslo
L.W. Swanson, San Diego

Behavioural Sciences and Neuropsychology

G. Berlucchi, Verona
A. Cowey, Oxford
P. Dean, Sheffield
J.M. Findlay, Durham
D. Gaffan, Oxford
V. Henn, Zürich
C.A. Marzi, Verona
M. Mishkin, Bethesda
J.P.N. Rawlins, Oxford
G. Rizzolatti, Parma
T.W. Robbins, Cambridge
E.T. Rolls, Oxford
P. Winn, St. Andrews

Administrative Office Manager: Mrs. G.M. Jaeckle,
MPI for biophysical Chemistry, Abt. 110, P.O. Box 2841,
W-3400 Göttingen, FRG, Tel. 551-201635, Telefax 551-201674,
Bitnet "Creutzfeldt MIKE.DNET. GWDG.DE"

Experimental Brain Research

Founded in 1966. Editorial Board: P. Dell, J.C. Eccles, D.M. MacKay, D. Ploog, J. Szentágothai, H. Waelsch.
Springer, Berlin Heidelberg New York.

Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all coauthors, if any, as well as by the responsible authorities at the institute where the work has been carried out; that, if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher; and that the manuscript will not be published elsewhere in any language without the consent of the copyright holders.
All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduce and distribute the article (e.g. as offprints), as well as all translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data bases, video disks, etc., without first obtaining written permission from the publisher.

The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, expressed or implied, with respect to the material contained herein.

Special regulations for photocopies in the USA

Photocopies may be made for personal or in-house use beyond the limitations stipulated under Section 107 or 108 of the U.S. Copyright Law, provided a fee is paid. All fees should be paid to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA, stating the ISSN 0014–4819, the volume, and the first and last page numbers of each article copied. The copyright owner's consent does not include copying for general distribution, promotion, new works, or resale. In these cases, specific written permission must first be obtained from the publisher.

Printers: Universitätsdruckerei H. Stürtz AG, W-8700 Würzburg
© by Springer-Verlag Berlin Heidelberg 1993

Contents

Aika Y → Ren JQ
Aiple F → Fischer B
Alstermark B, Pinter MJ, Sasaki S, Tantisira B: Trigeminal excitation of dorsal neck motoneurones in the cat 183
Antonopoulos J → Papadopoulos GC
Ashe J → Smyrnis N

Balaban CD → Schuerger RJ
Barker R, Dunnett S, Fawcett J: A selective tachykinin receptor agonist promotes differentiation but not survival of rat chromaffin cells in vitro 467
Basso MA → Evinger C
Ben-Ari Y → Represa A
Bender DB → Davidson RM
Benoist JM → Guilbaud G
Biscaldi M → Fischer B
Blümcke I, Celio MR: Parvalbumin and calbindin D-28k immunoreactivities coexist within cytochrome oxidase-rich compartments of squirrel monkey area 18 39
Bolton PS, Tracey DJ: Spinothalamic and propriospinal neurones in the upper cervical cord of the rat: terminations of primary afferent fibres on soma and primary dendrites 59
Bolton PS, Goto T, Wilson VJ: Horizontal canal input to upper cervical commissural neurons 549
BreMiller R → Gordon B
Brundin P → Nikkhah G
Burke RE → Floeter MK

Castro AJ → Sørensen JC
Cavanagh ME → Papadopoulos GC
Celio MR → Blümcke I
Cérat A → Molotchnikoff S
Clarke RW → Harris J
Cohen B → Yokota J-I
Cohen RM, Semple WE, Gross M, King AC, Nordahl TE: Metabolic brain pattern of sustained auditory discrimination 165
Collewijn H → Tan HS
Collewijn H → Tan HS

Davidson RM, Joly TJ, Bender DB: Effect of corticotectal tract lesions on relative motion selectivity in the monkey superior colliculus 246
Diehl B, Hoheisel U, Mense S: The influence of mechanical stimuli and of acetylsalicylic acid on the discharges of slowly conducting afferent units from normal and inflamed muscle in the rat 431
Douglas RM → Grasse KL
Dunnett S → Barker R

Evinger C, Manning KA: Pattern of extraocular muscle activation during reflex blinking 502
Evinger C, Basso MA, Manning KA, Sibony PA, Pellegrini JJ, Horn AKE: A role for the basal ganglia in nicotinic modulation of the blink reflex 507

Fawcett J → Barker R
Fischer B, Weber H, Biscaldi M, Aiple F, Otto P, Stuhr V: Separate populations of visually guided saccades in humans: reaction times and amplitudes 528
Floeter MK, Sholomenko GN, Gossard J-P, Burke RE: Disynaptic excitation from the medial longitudinal fasciculus to lumbosacral motoneurons: modulation by repetitive activation, descending pathways, and locomotion 407
Fuller JH: Head movement propensity 152
Funa K → Nikkhah G

Gabriel M → Sparenborg S
Gardiner TW, Nelson RJ: Striatal neuronal activity during the initiation and execution of hand movements made in response to visual and vibratory cues 15
Gatayama T → Hashimoto I
Gautron M → Guilbaud G
Georgopoulos AP → Pellizzer G
Georgopoulos AP → Smyrnis N
Ghosh S, Turman AB, Vickery RM, Rowe MJ: Responses of cat ventroposterolateral thalamic neurons to vibrotactile stimulation of forelimb footpads 286
Gordon B, BreMiller R: Decreasing the cortical response to monocular deprivation need not decrease cell shrinkage in cat lateral geniculate nucleus 79
Gossard J-P → Floeter MK
Goto T → Bolton PS
Gramsbergen A → Westerga J
Grasse KL, Douglas RM, Mendelson JR: Alterations in visual receptive fields in the superior colliculus induced by amphetamine 453
Gross M → Cohen RM
Grubb BD, Stiller RU, Schaible H-G: Dynamic changes in the receptive field properties of spinal cord neurons with ankle input in rats with chronic unilateral inflammation in the ankle region 441
Grüsser O-J → Seeck M
Guilbaud G, Benoist JM, Levante A, Gautron M, Willer JC: Primary somatosensory cortex in rats with pain-related behaviours due to a peripheral mononeuropathy after moderate ligation of one sciatic nerve: neuronal responsivity to somatic stimulation 227

Harris J, Clarke RW: An analysis of adrenergic influences on the suralgastrocnemius reflex of the decerebrated rabbit 310
Hashimoto I, Gatayama T, Yoshikawa K, Sasaki M: Somatosensory evoked potential correlates of psychophysical magnitude estimations for air-puff stimulation of the foot in man 318
Heizmann CW → Ren JQ
Hikosaka O → Iwamura Y
Hoheisel U → Diehl B
Horn AKE → Evinger C

Iwamura Y, Tanaka M, Sakamoto M, Hikosaka O: Rostrocaudal gradients in the neuronal receptive field complexity in the finger region of the alert monkey's postcentral gyrus 360

Jakab RL, Leranth C: Presence of somatostatin or neurotensin in lateral septal dopaminergic axon terminals of distinct hypothalamic and midbrain origins: convergence on the somatospiny neurons 420
Joly TJ → Davidson RM

Kaluzny P, Wiesendanger M: Feedforward postural stabilization in a distal bimanual unloading task 173
King AC → Cohen RM
Klausen B → Sørensen JC
Knudsen EI → Masino T
Kobayashi Y → Song W-J
Kondo Y → Tokuno H
Kosaka T → Ren JQ

Leranth C → Jakab RL
Levante A → Guilbaud G
Li CX → McCandlish CA
Lindvall O → Nikkhah G
Lurito JT → Pellizzer G

Manning KA → Evinger C
Masino T, Knudsen EI: Anatomical pathways from the optic tectum to the spinal cord subserving orienting movements in the barn owl 194
Massey JT → Pellizzer G
McCandlish CA, Li CX, Waters RS: Early development of the SI cortical barrel field representation in neonatal rats follows a lateral-to-medial gradient: an electrophysiological study 369
McGaraughty S, Reinis S: Simultaneous multi- and single-unit recordings in the rostral ventromedial medulla of ketamine-anaesthetized rats, and the cross-correlogram analysis of their interactions 489
Mendelson JR → Grasse KL
Mendelson JR → Schreiner CE
Mense S → Diehl B
Meßlinger K → Schepelmann K
Michaloudi H → Papadopoulos GC

Mizuno N → Tokuno H
Molotchnikoff S, Cérat A: Responses from outside classical receptive fields of dorsal lateral geniculate cells in rabbits 94
Murakami F → Song W-J

Nalbach H-O: Translational head movements of pigeons in response to a rotating pattern: characteristics and tool to analyse mechanisms underlying detection of rotational and translational optical flow 27
Nellgård B, Wieloch T: Cerebral protection by AMPA- and NMDA-receptor antagonists administered after severe insulin-induced hypoglycemia 259
Nelson RJ → Gardiner TW
Nikkhah G, Odin P, Smits A, Tingström A, Othberg A, Brundin P, Funa K, Lindvall O: Platelet-derived growth factor promotes survival of rat and human mesencephalic dopaminergic neurons in culture 516
Nordahl TE → Cohen RM

Odin P → Nikkhah G
Othberg A → Nikkhah G
Otto P → Fischer B

Palisses R → Persegol L
Papadopoulos GC, Cavanagh ME, Antonopoulos J, Michaloudi H, Parnavelas JG: Postnatal development of somatostatin-containing neurons in the visual cortex of normal and dark-reared rats 473
Parnavelas JG → Papadopoulos GC
Pellegrini JJ → Evinger C
Pellizzer G, Massey JT, Lurito JT, Georgopoulos AP: Three-dimensional drawings in isometric conditions: planar segmentation of force trajectory 326
Persegol L, Palisses R, Viala D: Characterization of hindlimb muscle afferents involved in ventilatory effects observed in decerebrate and spinal preparations 495
Pfaff DW → Robbins A
Pinter MJ → Alstermark B

Rajendra S, Rogers LJ: Asymmetry is present in the thalamofugal visual projections of female chicks 542
Raphan T → Reisine H
Reinis S → McGaraughty S
Reisine H, Raphan T: Neural basis for eye velocity generation in the vestibular nuclei of alert monkeys during off-vertical axis rotation 209
Reisine H → Yokota J-I
Ren JQ, Aika Y, Heizmann CW, Kosaka T: Quantitative analysis of neurons and glial cells in the rat somatosensory cortex, with special reference to GABAergic neurons and parvalbumin-containing neurons 1
Represa A, Ben-Ari Y: Kindling is associated with the formation of novel mossy fibre synapses in the CA3 region 69
Richardson C → Simmons RW
Robbins A, Pfaff DW, Schwartz-Giblin S: Reticulospinal and reticuloreticular pathways for activating the lumbar back muscles in the rat 46
Rogers LJ → Rajendra S
Rowe MJ → Ghosh S
Russo RE, Velluti JC: Inhibitory effects of excitatory amino acids on pyramidal cells of the in vitro turtle medial cortex 85

Sakamoto M → Iwamura Y
Sasaki M → Hashimoto I
Sasaki S → Alstermark B
Schaible H-G → Grubb BD
Schepelmann K, Meßlinger K, Schmidt RF: The effects of phorbol ester on slowly conducting afferents of the cat's knee joint 391
Schmidt RF → Schepelmann K
Schreiner CE, Mendelson JR, Sutter ML: Functional topography of cat primary auditory cortex: representation of tone intensity 105
Schuerger RJ, Balaban CD: Immunohistochemical demonstration of regionally selective projections from locus coeruleus to the vestibular nuclei in rats 351
Schwartz-Giblin S → Robbins A
Seeck M, Grüsser O-J: Category-related components in visual evoked potentials: photographs of faces, persons, flowers and tools as stimuli 338
Semple WE → Cohen RM
Sholomenko GN → Floeter MK
Sibony PA → Evinger C
Simmons RW, Richardson C: Effects of different types of mechanical load on the duration of the initial agonist pulse 524
Smits A → Nikkhah G
Smyrnis N, Taira M, Ashe J, Georgopoulos AP: Motor cortical activity in a memorized delay task 139
Song W-J, Kobayashi Y, Murakami F: An electrophysiological study of a transient ipsilateral interpositorubral projection in neonatal cats 399
Sparenborg S, Gabriel M: Local norepinephrine depletion and learning-related neuronal activity in cingulate cortex and anterior thalamus of rabbits 267
Sørensen JC, Castro AJ, Klausen B, Zimmer J: Projections from fetal neocortical transplants placed in the frontal neocortex of newborn rats: a *Phaseolus vulgaris*-leucoagglutinin tracing study 299
Stiller RU → Grubb BD
Stuhr V → Fischer B
Sutter ML → Schreiner CE

Taira M → Smyrnis N
Takada M → Tokuno H
Tan HS, Collewijn H, Van der Steen J: Shortening of vestibular nystagmus in response to velocity steps by microinjection of carbachol in the rabbit's cerebellar flocculus 385
Tan HS, Collewijn H, Van der Steen J: Unilateral cholinergic stimulation of the rabbit's cerebellar flocculus: asymmetric effects on optokinetic responses 375
Tanaka M → Iwamura Y
Tantisira B → Alstermark B
Tingström A → Nikkhah G
Tokuno H, Takada M, Kondo Y, Mizuno N: Laminar organization of the substantia nigra pars reticulata in the macaque monkey, with special reference to the caudato-nigro-tectal link 545
Tracey DJ → Bolton PS
Turman AB → Ghosh S

Van der Steen J → Tan HS
Velluti JC → Russo RE
Viala D → Persegol L
Vickery RM → Ghosh S

Waters RS → McCandlish CA
Weber H → Fischer B
Westerga J, Gramsbergen A: Changes in the electromyogram of two major hindlimb muscles during locomotor development in the rat 479
Wieloch T → Nellgård B
Wiesendanger M → Kaluzny P
Willer JC → Guilbaud G
Wilson VJ → Bolton PS

Yokota J-I, Reisine H, Cohen B: Nystagmus induced by electrical stimulation of the vestibular and prepositus hypoglossi nuclei in the monkey: evidence for site of induction of velocity storage 123
Yoshikawa K → Hashimoto I

Zimmer J → Sørensen JC